

LISTING OF THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Previously presented) A solid sorption heat pump comprising: an adsorber/desorber unit having a heat exchanger and a solid sorption material; condenser/evaporator unit; a common housing in which the adsorber/desorber unit and the condenser/evaporator unit are arranged together, wherein the common housing is sealed against the ambient environment; and an adsorptive-permeable element for separating the adsorber/desorber unit and the condenser/evaporator unit, wherein the adsorber/desorber unit includes a heat-conductive absorbent body that is arranged in a heat-conductive connection with the heat exchanger, wherein the absorbent body receives the sorption material, wherein the absorbent body provides stability to the adsorber/desorber unit, and wherein the common housing has an inner unit that is subjected to a negative pressure and the common housing is arranged as a thin-walled sheet metal sheathing which is placed on the absorbent body so that collapsing forces produced by the negative pressure on a component selected from the group consisting of the absorbent body, the heat exchanger, the condenser/evaporator unit, and any combinations thereof, are carried off.

2. (Previously presented) The solid sorption heat pump according to claim 1, wherein the condenser/evaporator unit is arranged in the common housing beneath the adsorber/desorber unit.

3. (Previously presented) The solid sorption heat pump according to claim 1, wherein the adsorptive-permeable element is a vapour-permeable sponge that produces a predetermined distance between the adsorber/desorber unit and the condenser/evaporator unit.

4. (Previously presented) The solid sorption heat pump according to claim 1, wherein the condenser/evaporator unit includes an additional absorbent body, wherein the additional absorbent body receives condensation/evaporation pipes through which a heat transfer medium flows, and wherein the heat transfer medium carries off condensation heat, supplies evaporation heat and provides stability to the condenser/evaporator unit.

5. (Previously presented) The solid sorption heat pump according to claim 1, wherein the absorbent body is selected from the group consisting of a lamellar construction and a metal sponge.

6. (Previously presented) The solid sorption heat pump according to claim 4, wherein the common housing is placed on the absorbent body, the additional absorbent body, and on sections of the heat exchanger and the condensation/evaporation pipes so that collapsing forces produced by the negative pressure on a component selected from the group consisting of the absorbent body, the heat exchanger, the condensation/evaporation pipes, and any combinations thereof, are carried off.

7. (Previously presented) The solid sorption heat pump according to claim 4, wherein the heat exchanger and the condensation/evaporation pipes are each arranged as at least one pipe loop, wherein each pipe loop has a plurality of horizontally arranged pipe sections that are joined with each

other at their horizontal ends by baffles so as to guide the heat transfer medium.

8. (Previously presented) The solid sorption heat pump according to claim 7, wherein the sheet metal sheathing is placed on the baffles from the outside.

9. (Previously presented) The solid sorption heat pump according to claim 1, wherein a component selected from the grout consisting of the supporting body, the heat exchanger of the adsorber/desorber unit, and a combination thereof is coated with the solid sorption material.

10. (Previously presented) The solid sorption heat pump according to claim 1, wherein the common housing is a two-shell housing whose intermediate space is filled between shells of the two-shell housing with a pressure-force-transmitting, heat-insulating material, wherein an intermediate space between the shells is evacuated.

11. (Previously presented) A solid sorption heat pump comprising: an adsorber/desorber unit having a heat exchanger and a solid sorption material; and a condenser/evaporator unit, wherein the adsorber/desorber unit includes a heat-conductive absorbent body that is in a heat-conductive connection with the heat exchanger, wherein the absorbent body receives the sorption material, wherein the absorbent body provides stability to the adsorber/desorber unit, wherein the condenser/evaporator unit includes an additional heat-conductive absorbent body that receives condensation/evaporation pipes through which a heat transfer medium flows, wherein the heat transfer medium carries off condensation heat, supplies evaporation heat, and provides

stability to the condenser/evaporator unit, wherein the adsorber/desorber unit is arranged in a first housing sealed from the ambient environment and the condenser/evaporator unit is arranged in a second housing sealed from the ambient environment, wherein inner spaces of the first and second housings are subjected to a negative pressure and are joined with each other by at least one vapour-conducting connection, and wherein the first and second housings are thin-walled sheet-metal sheathings that are placed on the absorbent body and the additional absorbent body so that the collapsing forces produced by the negative pressure on a component selected from the group consisting of the absorbent body, the additional absorbent body, the heat exchanger, the condensation/evaporation pipes, and any combinations thereof, are carried off.

12. (Previously presented) The solid sorption heat pump according to claim 11, wherein the absorbent body and the additional absorbent body are each selected from the group consisting of a lamellar construction and a metal sponge.

13. (Previously presented) The solid sorption heat pump according to claim 11, wherein the heat exchanger and the condensation/evaporation pipes are each arranged as at least one pipe loop, wherein each pipe loop has a plurality of horizontally arranged pipe sections that are connected with each other at their horizontal ends by baffles so as to guide the heat transfer medium.

14. (Previously presented) The solid sorption heat pump according to claim 13, wherein the sheet metal sheathings are placed on the baffles from the outside.

15. (Previously presented) The solid sorption heat pump according to claim 11, wherein the supporting body and/or the heat exchanger of the adsorber/desorber unit is/are coated with the solid sorption material.

16. (Previously presented) The solid sorption heat pump according to claim 11, wherein the first and second housings are double-shell housings whose intermediate spaces between shells of the double-shell housings are filled with a pressure-force-transmitting, heat-insulating material, and wherein intermediate spaces between the shells are evacuated.

17. (Previously presented) A heating system comprising: a heating circuit; a heat transfer medium that flows through the heating circuit; a high-temperature source that is connected to the heating circuit for supplying heat to the heat transfer medium at a predetermined first temperature level; a low-temperature source that is connected to the heating circuit for supplying heat to the heat transfer medium at a predetermined second temperature level which is lower than the first temperature level; a heating device that is connected to the heating circuit for removing heat from the heat transfer medium to a predetermined third temperature level which lies between the first and second temperature levels; a solid sorption heat pump according to claim 1 which is connected to the heating circuit; and at least one of a heating circuit distributor and at least one heating circuit valve which is connected to the heating circuit for selectively setting the flow of the heat transfer medium through the heating circuit.

18. (Previously presented) The heating system according to claim 17, wherein the at least one of the heating circuit distributor and the at least one heating circuit valve is adjustable for three switching phases wherein the three switching phases are a first switching phase for producing a first flow circulation of the heat transfer medium between the high-temperature source and the adsorber/desorber unit and a second flow circulation of the heat transfer medium between the condenser/evaporator unit and the heating device, a second switching phase for setting a first flow circulation of the heat transfer medium between the heating device and the adsorber/desorber unit and a second flow circulation of the heat transfer medium between the low-temperature source and the condenser/evaporator unit, and a third switching phase for setting a flow circulation of the heat transfer medium between the high-temperature source and the heating device.

19. (Previously presented) The solid sorption heat pump according to claim 3, wherein the vapour-permeable sponge is a ceramic sponge.

20. (Previously presented) The solid sorption heat pump according to claim 4, wherein the additional absorbent body is similar to the absorbent body of the adsorber/desorber unit.

21. (Previously presented) The solid sorption heat pump according to claim 10, wherein the pressure-force-transmitting, heat-insulating material is a granulate bulk material.

22. (Previously presented) The solid sorption heat pump according to claim 16, wherein the pressure-force-transmitting, heat-insulating material is a granulate bulk material.